

REMARKS

Applicants appreciate the Examiner's consideration of its Appeal Brief with regard to the rejection of Claims 46-49, 52, 53, 56-79, 81 and 83-145 and the withdrawal of that rejection.

Applicants are canceling dependent Claims 109-118 herein, without prejudice or disclaimer.

Applicants have the following response to the Office Action of December 12, 2007 and the Examiner's new rejections.

Claim Rejections - 35 USC §112

In the Office Action, the Examiner now rejects Claims 46-49, 52, 53, 56-79, 81 and 83-145 under 35 U.S.C. §112, second paragraph, as being indefinite. This rejection is respectfully traversed.

While Applicants traverse this rejection, in order to advance the prosecution of this application, Applicants are amending independent Claim 46 to recite "a color filter formed over the interlayer insulating film and the first conductive layer, wherein an opening is formed in the color filter;" "a pixel electrode formed over the color filter and electrically connected to the first conductive layer through the opening," and "wherein the color filter covers the entire first thin film transistor and the entire semiconductor film except an area where the opening is formed." Similar amendments are being made to independent Claims 47, 48, 52 and 56-61.

It is respectfully submitted that this claim language overcomes the Examiner's objection to the claim language of the color filter covering the entire first film transistor, and is supported by at least Fig. 28A of the present application.

Accordingly, it is respectfully requested that this rejection be withdrawn.

Claim Rejections - 35 USC §103

The Examiner also has the following rejections under 35 U.S.C. §103:

1. Claims 46, 47, 59, 65, 89, 90, 96, 99, 100, 106, 109, 110, 116, 139, 140 and 144 are rejected as being unpatentable over Kodota et al. (U.S. 5,818,550) in view of Noda et al. (U.S. 5,585,951 - a new reference).
2. Claims 48, 49, 52, 53, 60, 61, 66, 67, 91, 92, 97, 98, 101, 102, 107, 108, 111, 112, 117, 118, 141 and 145 are rejected as being unpatentable over Kodota in view of Noda et al. and further in view of Seo (U.S. 6,323,521).
3. Claims 56, 62, 71, 74, 93, 103, 113 and 142 are rejected as being unpatentable over Kodota in view of Noda and further in view of Ha (U.S. 5,677,207).
4. Claims 57, 58, 63, 64, 72, 73, 75, 76, 94, 95, 104, 105, 114, 115 and 143 are rejected as being unpatentable over Kodota in view of Noda in view of Seo and further in view of Ha.
5. Claims 77, 78 and 86 are rejected as being unpatentable over Kodota in view of Noda and further in view Matsumoto (U.S. 5,323,042).
6. Claims 79, 81, 87 and 88 are rejected as being unpatentable over Kodota in view of Noda in view of Seo and further in view of Matsumoto.
7. Claim 68 is rejected as being unpatentable over Kodota in view of Noda and further in view of Mikoshiba (U.S. 5,499,123).
8. Claims 69-70 are rejected as being unpatentable over Kodota in view of Noda in view of Seo and further in view of Michael Sheba.
9. Claim 83 is rejected as being unpatentable over Kodota in view of Noda in view of Ha and further in view of Matsumoto.
10. Claims 84 and 85 are rejected as being unpatentable of Kodota in view of Noda in view of Seo in view of Ha and further in view of Matsumoto.
11. Claims 119, 121-126 are rejected as being unpatentable over Kodota in view of Noda and further in view of Kunii et al. (U.S. 5,412,493).
12. Claims 121, 122, 127 and 128 are rejected as being unpatentable over Kodota in view of Noda in view of Seo and further in view of Kunii.
13. Claim 123 is rejected as being unpatentable over Kodota in view of Noda in view of Ha and further in view of Kunii.
14. Claims 124 and 125 are rejected as being unpatentable over Kodota in view of

Noda in view of Seo in view of Ha and further in view of Kunii.

15. Claims 129, 130 and 136 are rejected as being unpatentable over Kodota in view of Noda and further in view of Kodota et al. (U.S. 6,013,512).
16. Claims 131, 132, 137 and 138 are rejected as being unpatentable over Kodota 'in view of Noda in view of Seo and further in view of Kodota '512.
17. Claims 133 is rejected as being unpatentable over Kodota in view of Noda in view of Ha and further in view of Kodota '512.
18. Claims 134 and 135 are rejected as being unpatentable over Kodota in view of Noda in view of Seo in view of Ha and further in view of Kodota '512.

Each of these rejections is also respectfully traversed.

Each of the above rejections involves a combination of Kadota and Noda, and, in most of the rejections, one or more other references. Applicants respectfully submit that the alleged combination of Kadota and Noda fail to disclose or suggest the claimed invention, and that the combination of these two references is improper.

Initially, it is noted that the Examiner relies upon Figs. 18 and 19 in Noda. However, Noda appears to disclose in these figures more than one color filter (i.e. 1803, 1810) over the semiconductor and insulating film.

Further, independent Claim 46, for example, recites "a first conductive layer formed over the interlayer insulating film and electrically connected to one of the source and drain regions of the first thin film transistor;" and that the pixel electrode is "electrically connected to the first conductive layer." The other independent claims have similar features. There appears to be no disclosure or suggestion of this in Fig. 18 in Noda.

In addition, the Examiner contends that in Kadota, the interlayer insulating film is 4 and the conductive layer is 7. However, layer 7 does not appear to be over layer 4 in Kadota, as required in, for example, independent Claim 46 of the present application.

Further, Noda does not disclose or suggest a color filter over a first conductive layer, and especially not over a first conductive layer which is formed over the interlayer insulating film and electrically connected to the source and drain regions, as in for example independent Claim 46.

Applicants also cannot determine if any of the color filters (9R, 9G, 9B) in Kadota is over alleged conductive layer 7.

Hence, even if combined, Kadota and Noda (and the other cited references) fail to disclose or suggest the semiconductor device of independent Claims 46, 47, 48, 52 and 56-61.

In addition, it is respectfully submitted that the combination of Kadota and Noda or the modification of Kadota with Noda is improper.

In order to combine references, or to modify a reference, there must be some teaching, motivation or suggestion to support the combination or modification of the references. See In re Fine, 837 F.2d 1071, 1074, 5 USPQ2d 1596, 1598-1599 (Fed. Cir. 1988). If proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification and the modification is improper. See In re Gordon, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984); MPEP 2143.01.

In this case, the Examiner's proposed modification of Kadota with Noda is contrary to the teachings in Kadota.

As Applicants previously explained in their brief, Kadota discloses color filter 9 divided into discrete segments 9R, 9G and 9B. See e.g. Fig. 1, col. 3, Ins. 56-57 and col. 4, Ins. 29-30 in Kadota. These discrete segment color filters are separated from one another and in no way cover the entire TFT and semiconductor film (except an area where an opening is formed), as in the claimed invention. In fact, if they cover any part of the TFT, it is an extremely small portion, as

shown in Fig. 1 in Kadota. From the patent, it is clear that Kadota *specifically* designed this structure so that these color filters are separated and not over the TFT. For example, col. 1, lns. 31-40 describe finely dividing the color filter 9 into tiny segments. See also col. 3, lns. 56-57; col. 4, lns. 29-30 in Kadota.

Kadota further states that "*The critical feature* of the laminated structure resides in the provision of the third layer between the second and fourth layers." Col. 4, lns. 40-42 (emphasis added). This third layer is planarization film 10 which separates the color filters from the pixel electrodes, protects the color filters against damaging force which may be applied to the color filters in subsequent steps of the manufacturing process, prevents impurities in the color filters from spreading into the liquid crystal, and fills in the concavities and convexities presented by the TFT and the color filters. See e.g. col. 4, lns. 29-47, col. 5, ln. 61 - col., 6, ln. 3 and col. 7, lns. 36-47 in Kadota. Clearly, in this discrete segmented color filter structure, the planarization film (or third layer) is an important and critical component of the device and disclosure in Kadota and is required to meet the objective of the invention in Kodata (see e.g. col. 2, lns. 17-22 in Kadota).

The Examiner appears to overlook these teachings and criticality in Kadota when combining this reference with Noda to arrive at the claimed invention.

If the Examiner's alleged teaching of Noda is used to create one color filter covering the transistor (which Applicants do not believe Noda teaches), there would no longer be discrete color filters, which is contrary to the teachings in Kadota. Also, would there still be a planarization film? If not, what would protect the color filters, as is one of the purposes of the planarization film in Kadota? If one kept the planarization film in this alleged modification, what would be the purpose of having a flat color filter covering the entire transistor? This would

seem to make the structure larger by increasing layers. Hence, only the discrete color filter segments make sense in Kadota.

Accordingly, modifying Kadota with Noda as the Examiner contends is contrary to the teaching in Kadota. Therefore, to modify Kadota as suggested by the Examiner can only be based on hindsight reconstruction, using the claimed invention as a blueprint. This is improper. Hence, the combination of references is improper, and the rejections based thereon improper.

Accordingly, it is respectfully requested that these rejections be withdrawn.

Information Disclosure Statement

Applicants are preparing an information disclosure statement (IDS) and will submit it in the very near future. It is respectfully requested that this IDS be entered and considered prior to the issuance of any further action on this application.

Conclusion

It is respectfully submitted that the present application is in a condition for allowance and should be allowed.

If any fee should be due for this amendment, please charge our deposit account 50/1039.

Favorable reconsideration is earnestly solicited.

Respectfully submitted,

Date: March 12, 2007

/Mark J. Murphy/
Mark J. Murphy
Registration No. 34,225

COOK, ALEX, McFARRON, MANZO,
CUMMINGS & MEHLER, LTD.
200 West Adams Street; Suite 2850
Chicago, Illinois 60606
(312) 236-8500
Customer No. 26568